

PRINTING/GRAPHICS TECHNOLOGY II A & B

COURSE DESCRIPTION

PRINTING / GRAPHICS TECHNOLOGY II is the second level of Graphic Design & Printing Technologies I and it prepares students for work-related skills and advancement into graphic design and digital imaging and for gainful employment and/or entry into post-secondary education in the Graphic Communications industry. Content provides students the opportunity to acquire marketable skills in both theory and practical application. Advanced knowledge and skill in the printing industry will be enhanced in a laboratory setting that duplicates the printing industry and offers school/work based learning opportunities.

It is strongly recommended that administration and guidance follow the scope and sequence and course recommendations as listed.

Recommended: Printing/Graphics Technologies I

Recommended Credits: 1 - 2

Recommended Grade Levels: 10th – 12th

Number of Competencies in Course:

Printing / Graphics Technology II A - 41

Printing / Graphics Technology II

NOTE: Printing/Graphics Technologies II A includes standards 1 through 8.

Printing/Graphics Technologies II B includes standards 1-4 in addition to 9-14.

PRINTING/GRAPHICS TECHNOLOGY II A & B

STANDARDS

- 1.0** Student will perform safety examinations and maintain safety records.
- 2.0** Students will demonstrate leadership, citizenship, and teamwork skills required for success in the school, community, and workplace.
- 3.0** Students will integrate reading, writing, math, and science skills and understand the impact of academic achievement in the workplace.
- 4.0** Students will demonstrate interpersonal and employability skills required in the printing industry.
- 5.0** Students will employ advanced industry skills in digital image preparation.
- 6.0** Students will employ advanced industry skills in image assembly/platemaking.
- 7.0** Students will employ advanced industry skills in press operation.
- 8.0** Students will employ advanced industry skills in finishing and bindery operations.
- 9.0** Students will employ advanced industry skills book image layout.
- 10.0** Students will employ advanced industry skills in multiple placement image properties.
- 11.0** Students will employ advanced industry skills, in multiple color image preparation.
- 12.0** Students will employ advanced industry skills in multiple color press operations.
- 13.0** Students will apply accounting skills to the printing industry.
- 14.0** Students will apply graphic communications knowledge and skills in a specific work-based or student initiative project learning experience.

PRINTING / GRAPHICS TECHNOLOGY II A & B

STANDARD 1.0

Student will perform safety examinations and maintain safety records.

LEARNING EXPECTATIONS

The student will:

- 1.1** Pass with 100% accuracy a written examination specific to safety issues related to this course of study.
- 1.2** Pass with 100% accuracy a performance examination specific to tools and equipment related to this course of study.
- 1.3** Maintain a portfolio record of written safety examinations and equipment examinations for which the student has passed an operational checkout by the instructor.
- 1.4** Follow rules and regulations to comply with personal and lab safety standards to include general standards, fire and electrical.
- 1.5** Practice and apply health and safety OSHA standards as they pertain to the course.
- 1.6** Select tools, technology, machinery, equipment, and materials appropriate for the given assignment.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 1.1** Pass with 100% accuracy a written examination relating specifically to safety issues in relation to this course of study.
- 1.2** Pass with 100% accuracy a performance examination relating specifically to tools and equipment in relation to this course of study.
- 1.3** Maintain a portfolio record of written safety examinations and equipment examinations for which the student has passed an operational checkout by the instructor.
- 1.4** Demonstrate and follows procedures for classroom and lab safety, fire safety, and electrical safety.
- 1.5** Assesses and applies health and safety OSHA standards as they pertain to the course.
- 1.6A** Demonstrate appropriate use of tools to complete assignment.
- 1.6B** Identifies sources of information concerning state-of-the-art tools, equipment, materials, and technologies.
- 1.6C** Identifies potential hazards related to related to use of tools and equipment.

SAMPLE PERFORMANCE TASKS

- Assess the work area for safety hazards.
- Design a corrections program for identified hazards.
- Model the appropriate protective equipment for an assignment for an assigned task.
- Read manufacturer specifications to determine safe practices while working on various electrical and electronic systems.
- Demonstrate personal safety (e.g., dress eye and hearing devices, and jewelry).
- Demonstrate the handling and disposing of chemicals.
- Complete a safety inspection evaluating possible fire and water hazards.
- Develop a presentation on right to know laws and any other laws required for safety.
- Practice safe disposal procedures when using chemicals used in related processes.
- Practice ergonomic processes when using the computers and equipment.
- Prepare Occupational Safety and Health notebook for the Tennessee SkillsUSA Championship

INTEGRATION LINKAGES

Science, Computer Skills, Research and Writing Skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, Algebra, Geometry, Technical Geometry, Secretary's Commission on Achieving Necessary Skills (SCANS), SkillsUSA, SkillsUSA *Professional Development Program* (PDP), SkillsUSA *Total Quality Program* (TQP).

PRINTING / GRAPHICS TECHNOLOGY II A & B

STANDARD 2.0

Students will demonstrate leadership, citizenship, and teamwork skills required for success in the school, community, and workplace.

LEARNING EXPECTATIONS

The student will:

- 2.1** Cultivate positive leadership skills.
- 2.2** Participate in the student organization directly related to their program of study as an integral part of classroom instruction.
- 2.3** Assess situations, apply problem-solving techniques and decision-making skills within the school, community, and workplace.
- 2.4** Participate as a team member in a learning environment.
- 2.5** Respect the opinions, customs, and individual differences of others.
- 2.6** Build personal career development by identifying career interest, strengths, and opportunities.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 2.1A** Demonstrates character and leadership skills using creative and critical thinking skills.
- 2.1B** Uses creative thought process by “thinking outside the box”.
- 2.2A** Relates the creed, purposes, motto, and emblem of their student organization, directly related to personal and professional development.
- 2.2B** Plans and conducts meetings and other business according to accepted rules of parliamentary procedure.
- 2.3A** Makes decisions and assumes responsibilities.
- 2.3B** Analyzes a situation and uses the Professional Development Program or career technical student organization materials directly related to the student’s program of study to resolve it.
- 2.3C** Understands the importance of learning new information for both current and future problem solving and decision making.
- 2.4A** Organizes committees and participates in functions.
- 2.4B** Cooperates with peers to select and organize a community service project.
- 2.5A** Research different customs and individual differences of others.
- 2.5B** Interacts respectfully with individuals of different cultures, gender, and backgrounds.
- 2.5C** Resolves conflicts and differences to maintain a smooth workflow and classroom environment.
- 2.6A** Creates personal career development by identifying career interests, strengths, and opportunities.
- 2.6B** Identifies opportunities for career development and certification requirements.
- 2.6C** Plans personal educational paths based on available courses and current career goals.
- 2.6D** Create a resumé that reflects student’s skills, abilities, and interest.

SAMPLE PERFORMANCE TASKS

- Create a leadership inventory and use it to conduct a personal assessment.
- Participate in various career technical student organizations' programs and/or competitive events.
- Implement an annual program of work.
- Prepare a meeting agenda for a specific career technical student organization monthly meeting.
- Attend a professional organization meeting.
- Participate in the American Spirit Award competition with SkillsUSA.
- Complete *Professional Development Program Levels I and Level II*, SkillsUSA.

INTEGRATION LINKAGES

SkillsUSA, Professional Development Program; SkillsUSA; Communications and Writing Skills; Teambuilding Skills; Research; Language Arts; Sociology; Psychology; Math; Technical Math; English IV; Communications for Life; Social Studies; Problem Solving; Interpersonal Skills; Employability Skills; Critical-Thinking Skills; Secretary's Commission on Achieving Necessary Skills (SCANS); Chamber of Commerce; Colleges; Universities; Technology Centers.

PRINTING / GRAPHICS TECHNOLOGY II A & B

STANDARD 3.0

Students will integrate reading, writing, math, and science skills and understand the impact of academic achievement in the work place.

LEARNING EXPECTATIONS

The student will:

- 3.1** Assume responsibility for accomplishing classroom assignments and workplace goals within accepted time frames.
- 3.2** Develop advanced study skills.
- 3.3** Demonstrate and use written and verbal communication skills.
- 3.4** Read and understand technical documents such as regulation, manuals, reports, forms, graphs, charts, and tables.
- 3.5** Apply the foundations of mathematical principles such as algebra, geometry, and advanced math to solve problems.
- 3.6** Apply the basic scientific principles and methods to solve problems and complete **task**.
- 3.7** Understand computer operations and related applications to input, store, retrieve, and output information as it relates to the course.
- 3.8** Research, recognize, and understand the interactions of the environment and *green* issues as they relate to the course work and to a global economy.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 3.1A** Uses appropriate time management to achieve goals.
- 3.1B** Arrives in class on time each day.
- 3.1C** Complete assignments and meets deadlines.
- 3.2A** Assesses current personal study skills.
- 3.2B** Demonstrates advanced note-taking ability.
- 3.2C** Formulates appropriate study strategies for given task.
- 3.3A** Communicates ideas, information, and messages in a logical manner.
- 3.3B** Fills out forms, reports, logs, and documents to comply with class and project requirements.
- 3.4A** Reads and understands technical documents and uses industry jargon, acronyms, and terminology appropriately.
- 3.4B** Recognize the meaning of specialized words or phrases unique to the career and industry.
- 3.5A** Utilizes computation in adding, subtracting, multiplying, and dividing of whole numbers, fractions, decimals, and percents.
- 3.5B** Chooses the right mathematical method or formula to solve a problem.
- 3.5C** Performs math operations accurately to complete classroom and lab task.
- 3.6A** Understands scientific principles critical to the course.
- 3.6B** Applies scientific principles and technology to solve problems and complete tasks.
- 3.6C** Has knowledge of the scientific method (e.g., identifies the problem, collects information, forms opinions, and drawn conclusions).

- 3.7A** Uses basic computer hardware (e.g., personal computers, printers) and software to perform task as required for the course work.
- 3.7B** Understands capabilities of computers and common computer terminology (e.g., program, operating system).
- 3.7C** Applies the appropriate technical solution to complete task.
- 3.7D** Inputs data and information accurately for the course requirements.
- 3.8A** Researches and recognizes *green* trends in career area and industry.
- 3.8B** Examine current environmentally friendly trends.
- 3.8C** Applies sustainability practices by understanding processes that are non-polluting, conserving of energy and natural resources, and economically efficient.

SAMPLE PERFORMANCE TASKS

- Examine and compile different learning styles for portfolios.
- Create calendars containing all activities and obligations for one month. Discusses how to handle conflicting or competing obligations then complete daily and weekly plans showing task, priorities, and scheduling.
- Complete self-assessments of study habits.
- Complete precise and exact measurements.
- Explore study strategies for different subjects and tasks then analyze two homework assignments and select the best strategies for completing them.
- Create “life-maps” showing necessary steps or “landmarks” along the path to personal, financial, educational, and career goals.
- Take notes during counselor classroom visits and work in small groups to create flow charts of the path options.
- List attitudes that lead to success then rate individually in these areas. Work together to suggest strategies for overcoming the weaknesses identified own and partners’ self-assessments then share with the class the strategies developed.
- Research the Internet and other technology to collect and analyze data concerning climate change.
- Keep a data file of alternative energy sources and the sources’ impact on the environment.
- Develop a recycling project at home or for the school environment.

INTEGRATION LINKAGES

SkillsUSA, Professional Development Program; SkillsUSA; Communications and Writing Skills; Teambuilding Skills; Research; Language Arts; Sociology; Psychology; Math; Technical Math; English IV; Communications for Life; Social Studies; Problem Solving; Interpersonal Skills; Employability Skills; Critical-Thinking Skills; Secretary’s Commission on Achieving Necessary Skills (SCANS); Chamber of Commerce; Colleges; Universities; Technology Centers.

PRINTING / GRAPHICS TECHNOLOGY II A & B

STANDARD 4.0

Students will demonstrate interpersonal and employability skills required in the printing industry.

LEARNING EXPECTATIONS

The student will:

- 4.1** Demonstrate employability skills, such as pride in work and individual responsibility.
- 4.2** Demonstrate job retention skills.
- 4.3** Compare career paths within the printing industry.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 4.1** Designs a check sheet of employability skills and continuing education in local Graphic Communications I industries.
- 4.2A** Analyzes job retention skills and performs a self-evaluation.
- 4.2B** Compares financial benefits of long-term employment with short-term.
- 4.2C** Evaluates parts of a job performance review.
- 4.3** Evaluates organizations that employ graphic arts employees.

SAMPLE PERFORMANCE TASKS

- Complete Level 4 of the *Professional Development Program*, SkillsUSA.
- Develop personal career path objectives.
- List personal traits and attitudes that are important for successful careers in the printing industry.
- Develop a career presentation for Graphic Communications I.
- Participates in mock performance review.

INTEGRATION LINKAGES

Art, Math, Technical Math, Chemistry, Science, Health, Manipulative Skills, Communication Skills, Teamwork Skills, Language Arts, Research and Writing Skills, Decision-Making Skills, Critical-Thinking Skills, Secretary's Commission on Achieving Necessary Skills (SCANS), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), Tennessee Occupational Safety and Health Administration (TOSHA), PrintED, SkillsUSA.

PRINTING / GRAPHICS TECHNOLOGY II A & B

STANDARD 5.0

Students will employ advanced industry skills in digital image preparation.

LEARNING EXPECTATIONS

The student will:

- 5.1** Evaluate basic design and type principles.
- 5.2** Use appropriate software for page design and layout.
- 5.3** Diagram digital image preparation equipment.
- 5.4** Operate all digital image preparation equipment.
- 5.5** Output correct material for production of printed piece.
- 5.6** Incorporate safety rules and procedures.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 5.1A** Utilizes principles of design.
- 5.1B** Incorporates the basic design principles in hand drawn sketches and measured layouts.
- 5.2A** Selects appropriate software (word processing, page layout, and graphic) for page design and layout.
- 5.2B** Uses appropriate software for word processing, graphics, scanning, and page layout.
- 5.3** Demonstrates the steps involved to create a printed piece using digital image preparation equipment.
- 5.4** Designs and produces a document using various equipment and software involving digital image preparation.
- 5.5** Outputs media for use in image assembly and platemaking.
- 5.6A** Follows Occupational Safety & Health Administration (OSHA) and Environmental Protection Agency (EPA) requirements.
- 5.6B** Develops a presentation using the principles of unity, contrast, page proportion, and balance.

SAMPLE PERFORMANCE TASKS

- Work as a team to create a brochure using text, graphics, and illustrations.
- Work as a team to create an 8-page booklet using text, graphics, and illustrations.
- Develop a notepad and output media to be used in further operations.

INTEGRATION LINKAGES

Art, Math, Technical Math, Chemistry, Science, Health, Manipulative Skills, Communication Skills, Teamwork Skills, Language Arts, Research and Writing Skills, Decision-Making Skills, Critical-Thinking Skills, Secretary's Commission on Achieving Necessary Skills (SCANS), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), Tennessee Occupational Safety and Health Administration (TOSHA), PrintED, SkillsUSA.

PRINTING / GRAPHICS TECHNOLOGY II A & B

STANDARD 6.0

Students will employ advanced industry skills in image assembly/platemaking.

LEARNING EXPECTATIONS

The student will:

- 6.1** Operate platemaking equipment.
- 6.2** Incorporate safety rules and procedures.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 6.1** Prepare appropriate plate/master for reproduction.
- 6.2A** Occupational Safety & Health Administration (OSHA) and Environmental Protection Agency (EPA) requirements.
- 6.2B** Calculates the cost of unsafe practices.

SAMPLE PERFORMANCE TASKS

- Expose, process, and store a plate to be used on a printing job.
- Follow safety check tests for procedures in image assembly/platemaking.

INTEGRATION LINKAGES

Art, Math, Technical Math, Chemistry, Science, Health, Manipulative Skills, Communication Skills, Teamwork Skills, Language Arts, Research and Writing Skills, Decision-Making Skills, Critical-Thinking Skills, Secretary's Commission on Achieving Necessary Skills (SCANS), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), Tennessee Occupational Safety and Health Administration (TOSHA), PrintED, SkillsUSA.

PRINTING / GRAPHICS TECHNOLOGY II A & B

STANDARD 7.0

Students will employ advanced industry skills in press operation.

LEARNING EXPECTATIONS

The student will:

- 7.1** Demonstrate plate-handling skills.
- 7.2** Analyze various types of substrate.
- 7.3** Compare various press setups.
- 7.4** Demonstrate press operations on single color work.
- 7.5** Demonstrate press operations on multi-color work.
- 7.6** Perform major cleanup and preventive maintenance.
- 7.7** Incorporate safety rules and procedures for press operation.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 7.1** Identifies different types of plates and materials.
- 7.2A** Determines paper grain.
- 7.2B** Handles and jogs paper.
- 7.2C** Identifies paperweights, size, and coatings.
- 7.3A** Sets up press to print envelopes.
- 7.3B** Sets up press to print 20# bond.
- 7.3C** Sets up press to print cover stock.
- 7.4** Prints single color jobs.
- 7.5** Prints multi-color jobs.
- 7.6A** Cleans rollers, applies roller treatment, and sets pressures.
- 7.6B** Outlines preventive maintenance procedures.
- 7.7** Follows all safety check tests, rules, and regulations for press operations.

SAMPLE PERFORMANCE TASKS

- Prepare a presentation on plate handling, paper handling, and press setups.
- Make plate, set-up press, and print complete job.
- Check roller pressure and make any necessary adjustments.
- Enter the SkillsUSA Job Skill Demonstration competition.
- Time operations on press setup.
- Perform complete checklist for cleanup.
- Evaluate the effectiveness of preventive maintenance.

INTEGRATION LINKAGES

Art, Math, Technical Math, Chemistry, Science, Health, Manipulative Skills, Communication Skills, Teamwork Skills, Language Arts, Research and Writing Skills, Decision-Making Skills, Critical-Thinking Skills, Secretary's Commission on Achieving Necessary Skills (SCANS), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), Tennessee Occupational Safety and Health Administration (TOSHA), PrintED, SkillsUSA.

PRINTING / GRAPHICS TECHNOLOGY II A & B

STANDARD 8.0

Students will employ advanced industry skills in finishing and bindery operations.

LEARNING EXPECTATIONS

The student will:

- 8.1** Demonstrate finishing and binding operations.
- 8.2** Perform padding operations.
- 8.3** Incorporate safety rules and regulations for finishing and binding operations.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 8.1A** Sets up and operates the paper cutter.
- 8.1B** Sets up and operates a folder.
- 8.1C** Sets up and operates a stitcher.
- 8.1D** Sets up and operates a paper drill.
- 8.1E** Sets up and operates a collator.
- 8.1F** Sets up and operates a mechanical binder.
- 8.2** Pads bond stock and multiple carbonless forms.
- 8.3A** Completes safety checklist on each piece of equipment used.
- 8.3B** Incorporates safety rules in the operation of each piece of equipment.

SAMPLE PERFORMANCE TASKS

- Participate in SkillsUSA Job Skill Demonstration competition.
- Draw a paper-cutting layout and perform the cutting operations.
- Fold an 8 ½" x 11" sheet into a tri-fold brochure.
- Make a 12-page dummy and saddle stitch it.
- Drill several sheets to match a standard 3-ring binder.
- Collate an eight-page booklet for flat stitching.
- Work in teams to bind several multi-page books on a mechanical binder.
- Work in teams to make several note pads with 100 sheets per pad.
- Pad 3-part carbonless form sets.

INTEGRATION LINKAGES

Art, Math, Technical Math, Chemistry, Science, Health, Manipulative Skills, Communication Skills, Teamwork Skills, Language Arts, Research and Writing Skills, Decision-Making Skills, Critical-Thinking Skills, Secretary's Commission on Achieving Necessary Skills (SCANS), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), Tennessee Occupational Safety and Health Administration (TOSHA), PrintED, SkillsUSA.

PRINTING / GRAPHICS TECHNOLOGY II A & B

STANDARD 9.0

Students will employ advanced industry skills book image layout.

LEARNING EXPECTATIONS

The student will:

- 9.1** Evaluate correct layout for type or book assembled.
- 9.2** Create various components needed to layout different type books.
- 9.3** Analyze identified problems involved with book layout.

PERFORMANCE STANDARDS: EVIDENCE STANDARD IS MET

The student:

- 9.1A** Determines correct layout to meet book, equipment, and material restraints.
- 9.1B** Uses correct terminology for book assembly.
- 9.2A** Demonstrates diagram for saddle stitch books including page creep.
- 9.2B** Creates film flats for saddle stitch books.
- 9.2C** Demonstrates diagram for perfect bound books including appropriate gutter.
- 9.2D** Creates film flats for perfect bound books.
- 9.2E** Creates, folds, and stitches layout dummies using signatures for saddle stitch book.
- 9.3** Evaluates and solves common problems involved with book layout.

SAMPLE PERFORMANCE TASKS

- Using a previously produced book or magazine, develop layout diagram and dummy to meet requirements of different size equipment used in commercial printing companies.
- Work in conjunction with other classes to produce multiple page newsletters or newspapers.
- Working in teams, evaluate book layout and identify and solve possible problems prior to production. Brainstorm possible changes in the printing industry including equipment or training to solve common problems.

INTEGRATION LINKAGES

Art, Math, Technical Math, Chemistry, Science, Health, Manipulative Skills, SkillsUSA, *Professional Development Program*, SkillsUSA, Communications and Writing Skills, Applied Communications, Language Arts, Teambuilding Skills, Research, Social Studies, Problem Solving, Interpersonal Skills, Employability Skills, Critical-Thinking Skills, SCANS (Secretary's Commission on Achieving Necessary Skills), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), PrintED, Tennessee Occupational Safety and Health Administration (TOSHA).

PRINTING / GRAPHICS TECHNOLOGY II A & B

STANDARD 10.0

Students will employ advanced industry skills in multiple placement image properties.

LEARNING EXPECTATIONS

The student will:

- 10.1** Demonstrate various imposition systems.
- 10.2** Demonstrate step & repeat using appropriate software.
- 10.3** Incorporates safety rules and procedures.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 10.1** Comprehends guidelines for finished size 2/sided work and turn process.
- 10.2A** Utilizes software to layout flat using work and turn process.
- 10.2B** Utilizes software to layout flat using work and tumble process.
- 10.3** Employs Occupational Safety and Health Administration (OSHA) and Environmental Protection Agency (EPA) requirements.

SAMPLE PERFORMANCE TASKS

- Examine hazards present when using razor blades and knives.
- Passes a safety test with 100% accuracy on equipment, tools, chemicals used in the multiple placement image assembly process.
- Follow safety check tests for procedures in image assembly/platemaking.
- Lay out, measure, and rule an unruled masking sheet showing relevant guidelines for 8.5" x 11" finished size 2/sided flyer produced on 11"x17" using work and turn process.
- Lay out, measure, and rule an unruled masking sheet showing relevant guidelines for 8.5" x 11" finished size 2/sided flyer produced on 11"x17" using work and tumble process.
- Create film flat to run a 4 up job stepping film using pin register system.

INTEGRATION LINKAGES

Art, Math, Technical Math, Chemistry, Science, Health, Manipulative Skills, SkillsUSA, *Professional Development Program*, SkillsUSA, Communications and Writing Skills, Applied Communications, Language Arts, Teambuilding Skills, Research, Social Studies, Problem Solving, Interpersonal Skills, Employability Skills, Critical-Thinking Skills, SCANS (Secretary's Commission on Achieving Necessary Skills), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), PrintED, Tennessee Occupational Safety and Health Administration (TOSHA).

PRINTING / GRAPHICS TECHNOLOGY II A & B

STANDARD 10.0

Students will employ advanced industry skills in multiple color image preparation and assembly.

LEARNING EXPECTATIONS

The student will:

- 11.1** Describe and demonstrate the methods used to create trap.
- 11.2** Describe and demonstrate how and why to generate color separate.
- 11.3** Describe color theory.
- 11.4** Describe the methods of screen angling as used in process color assembly.
- 11.5** Produce a multi-colored proof.
- 11.6** Incorporate safety rules and procedures for press operation.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 11.1** Produce multi-color art with correct trap.
- 11.2** Produce color separations for a multi-color job.
- 11.3** Describe and demonstrate how different colors affect each other.
- 11.4** Demonstrate the correct screen angle for each process color.
- 11.5** Produce a multi-color match proof.
- 11.6** Follows all safety check tests, rules, and regulations for prepress operations.

SAMPLE PERFORMANCE TASKS

- Create multi-color film for a 4/color business card incorporating type that has to be trapped into background. (This film can be used for many of the following tasks.
- Use a color wheel to demonstrate how primary colors create supplementary colors
- Enter the SkillsUSA Job Skill Demonstration competition.
- Perform complete checklist for quality and cleanup.
- Produce multi-color proofs common marks and control bars.

INTEGRATION LINKAGES

Art, Math, Technical Math, Chemistry, Science, Health, Manipulative Skills, Communication Skills, Teamwork Skills, Language Arts, Research and Writing Skills, Decision-Making Skills, Critical-Thinking Skills, Secretary's Commission on Achieving Necessary Skills (SCANS), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), Tennessee Occupational Safety and Health Administration (TOSHA), PrintED, SkillsUSA

PRINTING / GRAPHICS TECHNOLOGY II A & B

STANDARD 12.0

Students will employ advanced industry skills in multiple color press operations.

LEARNING EXPECTATIONS

The student will:

- 12.1** Understand a variety of different impositions.
- 12.2** Demonstrate knowledge of varnishes and coatings.
- 12.3** Produce a 4-color process job.
- 12.4** Describe and demonstrate the purpose and use of color bars.
- 12.5** Understand all safety rules and practices associated with this operation.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 12.1** Prints a series of jobs using a variety of different impositions.
- 12.2** Applies varnishes or coatings to a previously printed job.
- 12.3** Prints a 4-color process.
- 12.4** Interprets color bars on a press sheet to determine quality and corrective action if needed.
- 12.5** Incorporates safety rules in the operation of each piece of equipment.

SAMPLE PERFORMANCE TASKS

- Participate in SkillsUSA Job Skill Demonstration competition.
- Print a 2-sided job using work & turn and work & tumble imposition.
- Apply a spot varnish to highlight a previously printed job.
- Print a four-color job using materials previously produced.
- Interpret color bars and slur indicator to determine press and print quality.
- Pass safety test with 100% on press operation.

INTEGRATION LINKAGES

Art, Math, Technical Math, Chemistry, Science, Health, Manipulative Skills, Communication Skills, Teamwork Skills, Language Arts, Research and Writing Skills, Decision-Making Skills, Critical-Thinking Skills, Secretary's Commission on Achieving Necessary Skills (SCANS), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), Tennessee Occupational Safety and Health Administration (TOSHA), PrintED, SkillsUSA.

PRINTING / GRAPHICS TECHNOLOGY II A & B

STANDARD 13.0

Students will apply accounting skills to the printing industry.

LARNING EXPECTATIONS

The student will:

13.1 Complete and implement a job schedule.

13.2 Complete a job cost schedule.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

13.1A Calculates time involved in completing various job from pre press operations to bindery and packing for shipping.

13.1B Schedules various job duties and implements production plan.

13.1C Determines fixed time that a job is estimated to take in each phase.

13.1D Determines extra charge to be made if a delay on the press results from awaiting customer approval of press proofs.

13.1E Evaluates safety issues and implements safe working conditions.

13.2A Determines the effects of spoilage on profit.

13.2B Calculates print estimations for various print jobs, including variable and fixed cost of operations.

13.2C Employs electronic estimating software to calculate cost.

13.2D Predetermines percentage added to the job price to recover combined expenses and profit.

SAMPLE PERFORMANCE TASKS

- Given case scenarios, students calculate production time, costs, and profits of given jobs.
- Working in teams, students develop a production plan for a given job. Areas of responsibility are assigned and time schedules are developed. Cost estimates are developed and profit is determined on fixed and variable costs components. One student should be assigned to supervise the production.

INTEGRATION LINKAGES

Art, Math, Technical Math, Chemistry, Science, Health, Manipulative Skills, SkillsUSA, *Professional Development Program*, SkillsUSA, Communications and Writing Skills, Applied Communications, Language Arts, Teambuilding Skills, Research, Social Studies, Problem Solving, Interpersonal Skills, Employability Skills, Critical-Thinking Skills, SCANS (Secretary's Commission on Achieving Necessary Skills), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), PrintED, Tennessee Occupational Safety and Health Administration (TOSHA)

PRINTING / GRAPHICS TECHNOLOGY II A & B

STANDARD 14.0

Students will apply graphic communications knowledge and skills in a specific work-based or student initiative project-based learning experience.

LEARNING EXPECTATIONS

The student will:

- 14.1** Apply principles of graphic communications to a work-based or school project-based learning situation.
- 14.2** Integrate time management principles in organizing personal schedule to include school, work, social, and other activities.
- 14.3** Evaluate and apply principles of ethics as they relate to the work-based or school project-based learning experience.
- 14.4** Employ principles of safety to the work-based or school project-based learning Experience.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 14.1** Scores 80% or above on performance evaluations based on job readiness, knowledge of press operations, and finishing operations.
- 14.2** Designs a personal plan to include schedule of activities.
- 14.3** Records and assesses workplace events based on ethical implications.
- 14.4A** Scores 100% on safety performance and knowledge test covering press and bindery equipment, tools, chemicals, OSHA and TOSHA rules and regulations.
- 14.4B** Applies safety rules and regulations to the work site.

SAMPLE PERFORMANCE TASKS

- Compose and maintain a work journal that includes general work site experiences, time management planning, and evaluation of ethical behavior.
- Create a training manual for a new employee outlining the safety considerations for the job.
- Keep a record of wages and hours-earned working on the job.
- Keep a record of personal work related expenses and budget according.

INTEGRATION LINKAGES

Art, Math, Technical Math, Chemistry, Science, Health, Manipulative Skills, SkillsUSA, *Professional Development Program*, SkillsUSA, Communications and Writing Skills, Applied Communications, Language Arts, Teambuilding Skills, Research, Social Studies, Problem Solving, Interpersonal Skills, Employability Skills, Critical-Thinking Skills, SCANS (Secretary's Commission on Achieving Necessary Skills), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), PrintED, Tennessee Occupational Safety and Health Administration (TOSHA)

SAMPLING OF AVAILABLE RESOURCES

- *The New Graphic Communications I Trade Customs/Business Practices*, Sponsored by Graphic
- Arts Technical Foundation (GATF) AND Printing Industry of America (PIA), 1994
- Graphic Arts Technical Foundation (GATF)
200 Deer Run Road
Sewickley, PA 15143-2600
1-800-662-391
- Lern, Dean Phillip. *Graphics Master 6*. Kihel, HI Dean Lem Associates, Inc, 1997.
- *Productivity Benchmarks: Sheetfed Printers Production Characteristics*. Compiled by PIA, 1000.
No. 00BT99676
- Ruggles, Philip K. *Printing Estimating: Digital & Traditional Costing Methods for Graphic Imaging*. 4th ed. Albany, NY: Delmar Publishers Inc., 1996 No. 00FM4424
- MAVCC - Graphic Arts: the Press and Finishing Processes